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Black & Veatch Special Projects Corp.

USEPA
Missouri Electric Works

BVSPC Project 46501.238
BVSPC File E.4
December 10, 2002

U.S. Environmental Protection Agency
901 N. 5th Street
Kansas City, Kansas 66101

Subject: Trip Reports - RD/RA Oversight for Missouri Electric Works

Attention: Pauletta France-Isetts

Gentlemen:

Enclosed are one copy each of our trip reports for RD/RA oversight activities during the periods October 29 through October 31, 2002; November 5 through November 6, 2002; and November 11 through November 14, 2002. During our oversight period, the PRPs were collecting groundwater samples from the existing monitoring wells and installing groundwater monitoring wells MW-12, MW-13, and MW-14. Three split groundwater samples were collected on October 31 and submitted to Trace Analytical Laboratory, our subcontractor, for analyses of VOCs, SVOCs, and PCBs. The preliminary analytical results from the samples have previously been forwarded to you. The trip reports are submitted in accordance with paragraphs 3.1 and 3.4 of the Statement of Work.

If you have any questions concerning the trip reports, please contact me at (913) 458-6605.

Very truly yours,

BLACK & VEATCH SPECIAL PROJECTS CORP.

H. David Sanders
Site Manager

ds
Enclosures

Missouri Electric Works
Site ID: MOD980965982
Break: 7.1

EPA Region VII Trip Report

Missouri Electric Works Site
Cape Girardeau, Missouri

EPA Work Assignment: 009-RLED-076R
BVSPC Project: 046501.0238

BVSPC Oversight Personnel:
Jeff Bowen

Dates of BVSPC Oversight Personnel Onsite:
Collect Split Water Samples from three wells at the scheduled quarterly sampling event.
Tuesday (Morning) October 29, through Thursday (Night) October 31, 2002

Weather Conditions:
Cloudy, Upper 50's °F (Average afternoon high), 40's °F (Average morning low).

Settling Defendant Activities Observed:
Following is a summary of observations noted during the scheduled quarterly sampling event performed at the Missouri Electric Works site during the period of October 29-31, 2002.

10/29/02 Tuesday
Arrived on site mid-morning. I was scheduled to meet with Mrs. Sandra Rudolph, a Philip employee that was contracted by Jacobs to represent Ameren at the site. Mr. Shawn Roberts and Mr. Nick Drane with Komex were also scheduled to be at the site. They were at their hotel to attend a conference call and would meet me at the site when they were finished. While waiting for them to arrive, I reviewed the work plan, the health and safety plan, and the previous results from past sampling events. Based on that data I had decided to collect samples from 3 of the following monitoring wells; MW-3, MW-5, MW-11, or MW-4.

At 14:40 Mrs. Sandra Rudolph, Mr. Shawn Roberts, and Mr. Nick Drane arrived on site and began opening the wells. They took water level measurements, and collected data via a laptop computer from the weather station and downloaded data from the Minitrol at MW11, MW11a, and MW3. Mr. Tom Marlo and Mr. John Gates, with Terra Drill, arrived on site with equipment for the upcoming events. See Attachment A, for well water level data.

10/31/02 Thursday
Arrived on the site early to begin the days activities. Mr. Shawn Roberts conducted a health and safety meeting and a brief site history.

Mr. Tom Marlo and Mr. John Gates setup the equipment and began purging MW11A with the pump and hose setup.

Mrs.Sandra Rudolph and Mr. Nick Drane purged and collected samples from MW7.

I spoke with Mr. Shawn Roberts about the wells I had chosen to sample, and the schedule of when they would be getting to those particular wells. I had chosen to sample MW-4, MW-3, and MW-11, because of the slow recharge time of MW-5 and because MW-5 was scheduled to be sampled the next day. I preferred collecting and sending all of my samples out the same day they were collected. I also decided after speaking with David Sanders at Black & Veatch, to take 2 extra samples for Filtered PCBs from MW3 and MW11. Ms. Ann Preston of Trace Analytical Laboratories, Inc indicated that the laboratory will extract the Filtered PCB samples, but will not analyze the extractions unless the PCB non-filtered samples contain PCBs.

Mr. Tom Marlo and Mr. John Gates purged approximately 100 gallons from MW11A and pulled the remaining purge volume with a stainless steel bailer attached to a wench with stainless steel cable.

Mrs. Sandra Rudolph and Mr. Nick Drane purged MW4. (10.5 gallons were purged)

MW4-103102-S
Sample Time = 10:30
(Temp=15.9, PH=6.68, Conductivity=348, Turbidity=22.5)

Mrs. Sandra Roudolph and Mr. Nick Drane began collecting samples from MW4.
I collected split samples for VOCs (8260B), SVOCs (8270C), and PCBs (8082).

Mrs. Sandra Rudolph and Mr. Nick Drane purged and collected samples from MW-10.

Mrs. Sandra Rudolph began purging MW-11. (40 gallons were purged)

Mr. Nick Drane began purging MW-3. (10 gallons were purged)

MW11-103102-S
Sample Time =15:35
(Temp=14.8, PH=6.57, Conductivity=410, Turbidity=317)

Mrs. Sandy Rudolph and Mr. Nick Drane began collecting samples from MW11.
I collected split samples for VOCs (8260B), SVOCs (8270C), PCBs (8082), and PCBs (8082) (Filtered)

MW3-103102-S
Sample Time =16:20
(Temp=13.4, PH=7.28, Conductivity=532, Turbidity=20)
Mrs. Sandy Rudolph and Mr. Nick Drane began collecting samples from MW3.
I collected split samples for VOCs (8260B), SVOCs (8270C), PCBs (8082), and

PCBs (8082) (Filtered).

I packed the coolers, and filled out the Chain of Custody. I packed samples from MW4, MW3, and MW11 into 2 coolers and shipped them via Fedex overnight to the Trace Analytical Laboratories in Muskegon, MI.

End of trip.

Deviations from Contractors Work Plan:
None.

Number/Location of Split Samples Collected by BVSPC/ Field Analytical Results:
MW4-103102-S Sample Time = 10:30
(Temp=15.9, PH=6.68, Conductivity=348, Turbidity=22.5)
VOCs 8260B, SVOCs 8270C, and PCBs 8082.

MW11-103102-S Sample Time =15:35
(Temp=14.8, PH=6.57, Conductivity=410, Turbidity=317)
VOCs 8260B, SVOCs 8270C, PCBs 8082, and
PCB's 8082 (Filtered)

MW3-103102-S Sample Time =16:20
(Temp=13.4, PH=7.28, Conductivity=532, Turbidity=20)
VOCs 8260B, SVOCs 8270C, PCBs 8082, and
PCBs 8082 (Filtered).

Number/Date/Location of Non-Split Samples Collected by BVSPC:
None

Site Visitors:
None

Onsite Media Presence:
None

Settling Defendant Members Onsite:
None

Settling Defendant Contractors Onsite:
(Personnel present on/off during this sampling event)
Mrs. Sandra Rudolph, Philip Env, contracted by Jabobs Eng. to represent Ameren UE
Mr. Shawn Roberts, Komex
Mr. Nick Drane, Komex
Mr. Tom Marlo, Terra Drill
Mr. John Gates, Terra Drill

Other Pertinent Information:
Attachment A – Well water level measurements.

12/3/02

BWSPC Oversight Personnel Signature ***Date***

Attachment A
Water Level Measurements (10/29/02)

Time	Well Designation	Elevation (From top of casing)
1455	WSW1	36.41
1515	MW9	40.6
1520	MW6	29.21
1525	MW6A	43.77
1535	MW7	23.07
1545	MW11A	42.07
1550	MW10	41.82
1554	MW4	42.33
1559	MW11A	40.23
1610	MW3	39.69
1605	MW5	39.09

EPA Region VII Trip Report

Missouri Electric Works Site
Cape Girardeau, Missouri

EPA Work Assignment: 009-RLED-076R
BVSPC Project: 046501.0238

BVSPC Oversight Personnel:
Jeff Bowen

Dates of BVSPC Oversight Personnel Onsite:
Observe the installation of 3 new groundwater monitoring wells from Tuesday (Morning) November 5, 2002 through Wednesday (Night) November 6, 2002

Weather Conditions:
Mostly Cloudy, Low 50's °F (Average afternoon high), Mid 30's °F (Average morning low).

Settling Defendant Activities Observed:
Following is a summary of observations noted during the scheduled well installations of three new wells performed at the Missouri Electric Works site during the period of November 5-6, 2002.

11/05/02 Tuesday
Arrived on site mid-morning. Mr. Shawn Roberts filled me in on the current Health and Safety issues that pertain to the days events. Mr. Tom Marlo and Mr. John Gates with Terra Drill had the drill rig set up at the new well location for MW-14 at the location of Geo-probe GP-33.

Mrs. Sandra Rudolph is using air monitoring equipment, and checking the extracted soil. At approximately 1100, the drillers had 70 feet of 6-1/4" diameter augers in the ground, and did not have more augers to go deeper. From the Geo-probe study that was previously performed done, they were told 60 feet of augers should be sufficient for the job. Mr. Shawn Roberts stated that around 60 feet, they had hit a layer of harder material, but were able to push past it. Mr. Tom Marlo called his office to have more augers delivered.

At approx 1500, Mr. Dave Gatto with Philip Environmental arrived on site with more augers. The drillers decontaminated the new augers.

At approx 1545, They continued drilling at MW-14. At around 72, 78, and 83 feet down, they hit some refusal, but pushed past it.

At approx 1620, the drillers were adding on the next section of auger and center plug. The plug was let go and it dropped about 10'-15' down. They were able to recover it with the wench and hook.

At approximately 1700, the drillers raised the center plug up and discovered that the last 10 feet of it was missing; the pin had fallen out and it was still at the bottom of the hole. . They began attempting to retrieve the center plug.

11/06/02 Wednesday

Arrived on site early-morning. Mr. Shawn Roberts conducted a Health and Safety meeting and discussed issues that pertained to the days events. The drillers had been working since 0700 to try and retrieve the center plug, using a PVC rod, with a lasso made out of stainless steel cable.

At approximately 1000, they successfully retrieved the center plug, and had bought bolts with locking nuts to replace the pins, to prevent this from happening again.

At approximately 1110, they returned to drilling and at 87 feet, they hit refusal. After lunch, they decontaminated the casing and removed the center plug. The casings were 21 feet long, and were welded together as they were installed. They inserted a 1" PVC pipe down to the bottom in order to pump the grout from the bottom up. At 1420, they began mixing grout and pumped it from the mixing tub. The casing had a PVC end cap in place to prevent a lot of grout from entering the casing. The casing is 6-1/2" diameter. Grout mix consisted of approximately 100 gallons of water, eight 94lb bags of cement, and 1 bag of bentonite.

At approximately 1430, they began pumping grout down the hole. They slowly removed five 10' augers and pumped more grout down the hole. They then mixed 1 more batch of grout and removed more augers and pumped the remaining grout to the bottom of the hole.

At approx 1900, they began preparing the casings for installation. Their plan was to drive the casing down through the grout and slightly into the bedrock.

End of trip.

Deviations from Contractors Work Plan:
None.

Number/Location of Split Samples Collected by BVSPC/ Field Analytical Results:
None

Number/Date/Location of Non-Split Samples Collected by BVSPC:
None

Site Visitors:
(Personnel present on/off during this drilling event)
Kurt Hollmann, Missouri Geologic Survey
Mr. Dave Gatto, Philip Environmental

Onsite Media Presence:
None

Settling Defendant Members Onsite:
None

Settling Defendant Contractors Onsite:
(Personnel present on/off during this drilling event)
Mrs. Sandra Rudolph, Philip Env, contracted by Jabobs Eng. To represent Ameren UE
Mr. Shawn Roberts, Komex
Mr. Nick Drane, Komex
Mr. Tom Marlo, Terra Drill
Mr. John Gates, Terra Drill

Other Pertinent Information:
None

12/3/02

BVSPC Oversight Personnel Signature ***Date***

EPA Region VII Trip Report
Missouri Electric Works Site
Cape Girardeau, Missouri

EPA Work Assignment: 009-RLED-076R
BVSPC Project: 046501.0238

BVSPC Oversight Personnel:
Jeff Bowen

Dates of BVSPC Oversight Personnel Onsite:
Observe the installation of 3 new groundwater monitoring wells from Monday (Afternoon) November 11, 2002 through Thursday (Afternoon) November 14, 2002

Weather Conditions:
Partly Cloudy, Mid to Upper 50's °F (Average afternoon high), Mid to Lower 30's °F (Average morning low).

Settling Defendant Activities Observed:
Following is a summary of observations noted during the scheduled installation of three new wells at the Missouri Electric Works site during the period of November 11-14, 2002.

11/11/02 Monday
Arrived on site early-afternoon. Mr. Shawn Roberts filled me in on the current Health and Safety issues that pertain to the days events. Mr. Tom Marlo was replacing the Kelly bar on the drill rig. The drillers were setting up at MW-13. They laid down plywood around the area for the drill rig to drive on, due to heavy rains on Sunday.

Mr. Shawn Roberts stated that MW-13 was drilled to a depth of 85 feet and the casing would only go as far as 55 feet down, MW-12 was drilled to a depth of 65 feet, with the casing all the way down.

At approx 1600, Mr. Tom Marlo placed a recirculation mud pit over the casing on MW-13. Mr. John Gates and Mr. Dave Gatto, decontaminated all the bits to be used for the coring operation, and then set up the equipment needed around the drill rig. This equipment included a portable diesel air compressor that supplied air to a regulator that mixed with water from the drill rig. The air and water mixture then enters the through the drill rig boom and into the well head during coring. At the top of the tee there is a compression fitting to minimize water from spraying upward and to force the water down the hole.

At approximately 1710, they began lowering the bit and the sections of rod. They used a hammer bit that will bore any grout out of the casing.

At approx 1830, the drillers stated that they were approximately 3 feet from bedrock, and will continue drilling first thing in the morning.

11/12/02 Tuesday

Arrived on site early-morning. Mr. Shawn Roberts conducted a Health and Safety meeting about the issues that pertain to the days events. The Drillers then filled up their water tank for the coring operation. Mr. Shawn Roberts told the drillers to tilt the recirculation mud pit to minimize blow out from the tee and contain and water in the tub.

At approx 0900 the drillers added the next 5 foot section and began to notice metal shavings coming out of the discharge. They decided to remove the bit to see if possibly the bit had broken. They were approximately 2 feet from the bottom.

At approx 1000, the drillers removed the bit and rods. Paul Hardisty with Komex arrived on site. The drillers added a smaller bit to try and push past the point of resistance. The bit would not push past the same area, about 85 feet down.

At approx 1140, the drillers removed the bit and rods from the hole, and took a lunch break. Kurt Hollman with Missouri Geological Survey arrived on site. Drillers began lowering a small 3-inch bit down, but this rod would not push past 85 feet either. The drillers then pounded the 3-inch bit with 5 blows, and it did not move. At approx 1520, the drillers removed the bit from the hole.

At approx 1600, Don Van Dyke with the Missouri Department of Natural Resources arrived on site. At approximately 1730, the drillers lowered a light with extension cords, and peered down the hole with binoculars. It appeared that the casing was bent.

11/13/02 Wednesday

Arrived on site early-morning . Mr. Shawn Roberts filled me in on the current Health and Safety issues that pertain to the days events. The drillers began laying down plywood and were moving to drill at MW-12. Kurt Hollman with Missouri Geologic Survey arrived on site.

At approx 0800, Derek Ingram with Philip Environmental arrived on site to discuss what had happened on MW-14. The drillers were welding the tee to the top of MW-12, and had the recirculation mud pit in place. Don Van Dyke with MDNR, and Paul Hardisty with Komex arrived on site. Drillers hooked up the air compressors and water supply and began reaming out the grout from the casing. At approx 1100, they began reaming the grout from the casing. At approximately 1115, the drillers observed rock fragments in the discharge. They removed the bit to begin coring. The core sample was 2 7/8" diameter.

At approximately 1400, the drillers lowered the diamond coring bit down the casing. At approximately 1500, the bit was at top of bedrock, and they began coring. At approximately 1540, the drillers had cored 2'-8" into bedrock, and upon removing the

core sample, had recovered 2'-6" of the sample. At approximately 1650, the drillers drilled another 5'-0", and upon removing the core sample, had recovered 2'-6 ½" of sample. Mr. Shawn Roberts was logging the core sample. Mr. Shawn Roberts and Mr. Paul Hardisty discussed with Don Van Dyke and Kurt Hollmann about deviating from the work plan because of the void they saw in the core sample. Kurt Hollmann stated that he would grant a variance on this well in order to utilize the conditions of the void in the bedrock. They decided to ream out the bedrock to a 6" diameter and leave the well in the open condition as a 6" diameter well.

11/14/02 Thursday

Arrived on site early-morning . Mr. Shawn Roberts filled me in on the current Health and Safety issues that pertain to the days events. Kurt Hollman and Don Van Dyke arrived on site. Drillers began lowering 5 7/8" bit down MW-12 to ream out the bed rock. After beginning to ream MW-12, and water blew out of the top of the tee about half way up the drill rig because the drillers had forgotten to put on the compression fitting. They shut down, put the compression fitting on, and continued drilling. I had recommended to Sandra Rudolph and Shawn Roberts that if this well contains PCBs, that surface composite soil samples be collected within a 10'-15' radius around the well head to verify that no contamination reached the surface soil.

At approx 1015, the drillers had reached the bottom of bedrock. Shawn Roberts stated that the total depth was 67'-2".

Dave Gatto rigged up the light for the on-site representatives to view down MW-14 to see the bent casing.

At approximately 1050, Paul Hardisty arrived on site. At Approximately 1130, Don Van Dyke left the site.

Mr. Shawn Roberts stated that later that day, they would install bumper posts around MW-12, and would wait until next week to get a larger well protector to put over it.

They plan on reaming down to the bottom of casing on MW-13 and return to the site next week to finish coring through the grout to the bedrock. A variance would be granted by MDNR to install this well with a 4" casing installed down to bedrock, with grout around it.

End of trip.

Deviations from Contractors Work Plan:

MW-12 has a 6" casing down to bedrock, sealed with grout, and the bedrock was reamed out to a 6" diameter.

Number/Location of Split Samples Collected by BVSPC/ Field Analytical Results:

None

Number/Date/Location of Non-Split Samples Collected by BVSPC:
None

Site Visitors:
(Personnel present on/off during this drilling event)
Mr. Kurt Hollmann, Missouri Geologic Survey
Mr. Don Van Dyke, Missouri Department of Natural Resources
Mr. Derek Ingram, Philip Environmental

Onsite Media Presence:
None

Settling Defendant Members Onsite:
None

Settling Defendant Contractors Onsite:
(Personnel present on/off during this drilling event)
Mrs. Sandra Rudolph, Philip Env, contracted by Jabobs Eng. to represent Ameren UE
Mr. Shawn Roberts, Komex
Mr. Nick Drane, Komex
Mr. Paul Hardisty, Komex
Mr. Tom Marlo, Terra Drill
Mr. John Gates, Terra Drill
Mr. Dave Gatto, Philip Environmental

Other Pertinent Information:
None

12/3/02

BVSPC Oversight Personnel Signature ***Date***